

REMARKS/ARGUMENTS

Claims 1-17 are pending in the present application. Claims 5-17 have been rejected under the second paragraph of 35 U.S.C. § 112. Claims 1-4 and 14-17 have been rejected under 35 U.S.C. § 102(b) over any of the patents to Suzuki or Masubuchi. Claims 5-13 have been deemed allowable if rewritten to overcome the § 112 rejection. Claims 5 and 14-17 have been amended hereby. In light of the attached amendments and the below remarks, reconsideration of the present application is respectfully requested.

In paragraph 3 of the Office Action, claims 5-17 have been rejected under the second paragraph of § 112. Specifically, the Office Action states that it is not clear what is meant by the term “storage” in claim 5 and “informer” in claim 14. In order to clarify these terms, claim 5 and claims 15-17 have been amended to indicate that the “storage” is a “storage medium”. Furthermore, the term “informer” in claim 14 has been replaced with the term “speaker.” It is respectfully submitted that these two clarifications address the rejection under the second paragraph of § 112 contained in the Office Action and withdrawal of the rejection is therefore respectfully requested. It is further noted that these changes do not narrow the scope of the claims, but rather provide a clarification that was lost during the translation of the claims from the original Japanese.

In paragraph 5 of the Office Action, claims 1-4 and 14-17 have been rejected under § 102(b) over any of the patents to Suzuki or Masubuchi. Applicants respectfully traverse this rejection. Independent claim 1 explicitly requires a “performance operator” that includes a “pressure sensor” that is “mounted on a base member” with both the pressure sensor and the base member being “encapsulated in a hold member” of “elastic material and is formed in a round shape suited for grip of a user”. Applicants respectfully submit that none of the cited references teach or suggest this combination of elements as explicitly recited in the claims of the present application.

The musical tone signal generation apparatus of the present invention detects pressure applied to the performance operator held by the player and generates corresponding musical tone signals in response to the detected pressure. None of the cited references teaches this type of the performance operator for detection of the player's grasping operation. Specifically, the musical tone signal generation apparatus of the subject invention is characterized by a providing performance operator that detects a players' grasping operations for the purpose of generation of musical tone signals. When the player holds and grasps the performance operator, the pressure sensor detects pressure applied *thereto so* as to generate a musical tone signal. That is, the player is capable of playing a prescribed musical instrument (or musical tone generation apparatus) by only holding and grasping the performance operator. None of the prior art cited in the rejection of the claims discloses or suggests an apparatus as recited in independent claim 1.

The Suzuki reference (U.S. Patent 4,920,848) provides a glove that is put on the player's hand and that provides finger switches 1 for respective fingers of the player. When the player stretches or bends his/her finger, the finger switch 1 operates in such a manner that the movable element 5 and the push button 7a are placed in a contact state (or ON state) or a non-contact state (or OFF state). A musical tone is generated or muted in response to the ON or OFF state of the finger switch 1. The Suzuki reference teaches only a glove for detecting the stretching and bending actions of the player's fingers. Suzuki completely fails to teach the subject matter of the present invention in which the pressure applied to the performance operator held and grasped by the player is detected for the purpose of generation of musical tones. Specifically, it does not teach or suggest a "pressure sensor" that is "mounted on a base member" with both the pressure sensor and the base member being "encapsulated in a hold member" of "elastic material and is formed in a round shape suited for grip of a user" as explicitly required by independent claim 1. Accordingly, withdrawal of the rejection based on Suzuki (U.S. Patent 4,920,848) is respectfully requested.

The Suzuki reference (U.S. Patent 5,058,480) teaches a musical tone control apparatus that controls generation of musical tones by detecting the player's swinging intensity applied to the baton incorporating an acceleration sensor. In this Suzuki reference, the player may hold the baton to be swung, however, the Suzuki et al reference completely fails to teach detection of the pressure applied to the performance operator held and grasped by the player.

Similarly, Suzuki (U.S. Patent 5,177,311) teaches a musical tone control apparatus in which the player holds and moves a stick having a sensor for detecting an angle and/or an acceleration, wherein generation of musical tones is controlled based on the detection result of the sensor. Herein, the player holds the stick to move; however, the Suzuki et al reference completely fails to teach detection of the pressure applied to the performance operator held and grasped by the player.

These references clearly do not teach any of the express limitations of independent claim 1 including a “pressure sensor” that is “mounted on a base member” with both the pressure sensor and the base member being “encapsulated in a hold member” of “elastic material and is formed in a round shape suited for grip of a user”. Accordingly, withdrawal of the rejection based on Suzuki (U.S. Patent 5,058,480, and 5,177,311) is respectfully requested.

Like U.S. Patent 4,920,848 to Suzuki, U.S. Patent 5,119,709 to Suzuki et al teaches a musical tone control device in which the player wears a glove having sensors for respective fingers, wherein generation of musical tones is controlled based on velocities of player's operations, which are computed based on the displacement (or finger bending value) and the time required for the displacement. That is, this device generates musical tones in response to player's stretching and bending motions of fingers. However, the Suzuki et al reference completely fails to teach generation of musical tones upon detection of the pressure applied to the performance operator held and grasped by the player as explicitly required by

claim 1. Accordingly, withdrawal of the rejection based on Suzuki (U.S. Patent 5,119,709) is respectfully requested.

Similar to the Suzuki glove references, the Masubuchi reference (U. S Patent 5,216,193) teaches a musical tone generation apparatus in which the player wears a glove having bending angle detectors for respective fingers, wherein musical tones are generated in response to bending angles of the fingers detected by the sensors when the player stretches or bends his/her fingers. That is, the Masubuchi reference generates musical tones in response to the stretching and bending operations of the player's fingers; however, it completely fails to teach generation of musical tones upon detection of the pressure applied to the performance operator held and grasped by the player as explicitly required by claim 1.

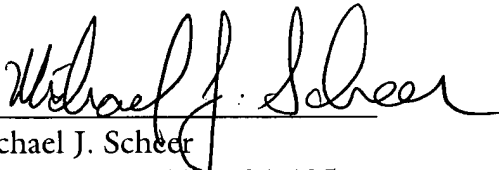
Masubuchi (U.S. Patent 5,338,891) teaches a musical tone control device in which the player wears a glove having sensors for respective fingers, wherein decisions are made as to key-on and key-off events based on finger bend values that are detected when the player stretches and bends his/her fingers, so that generation and mute of musical tones are controlled. This device generates musical tones in response to stretching and bending motions of the player's fingers. However, this Masubuchi reference also completely fails to teach generation of musical tones upon detection of the pressure applied to the performance operator held and grasped by the player as required by claim 1.

Neither of the Masubuchi references teach or suggest any of the express limitations of independent claim 1 including a "pressure sensor" that is "mounted on a base member" with both the pressure sensor and the base member being "encapsulated in a hold member" of "elastic material and is formed in a round shape suited for grip of a user". Accordingly, withdrawal of the rejection based on Masubuchi (U.S. Patent 5,216,193, and 5,338,891) is respectfully requested.

Applicants have clearly shown that none of the Masubuchi no Suzuki glover references teach or suggest the performance operator as explicitly recited in independent claim 1. Furthermore, neither of the Suzuki the baton references which depend on acceleration detection read on the present invention as recited in claim 1 which requires pressure sensing. Applicants therefore respectfully request withdrawal of the rejections based on the Suzuki and Masubuchi references. As each of the presently pending claims in this application is in condition for allowance, such action is earnestly solicited

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Respectfully submitted,

By 
Michael J. Scheer

Registration No.: 34,425
DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP
1177 Avenue of the Americas
41st Floor
New York, New York 10036-2714
(212) 835-1400
Attorneys for Applicant

Version With Markings to Show Changes Made

5. (Amended) A musical tone signal generation apparatus accommodated for multiple users to play music in an ensemble, comprising:

a main unit;

a plurality of performance operators, each of which is physically separated from the main unit and is manually operated by each user to issue tone-generation instructions, wherein at least one of the plurality of performance operators is configured as a hold operator that is configured using a pressure sensor mounted on a base member and encapsulated in a hold member which is made by elastic material and is formed in around shape suited for grip of the user.

a storage medium for storing performance data and tone color data with respect to at least a single musical tune constructed by a plurality of parts respectively corresponding to a plurality of tone colors;

a tone color assignor for assigning the plurality of tone colors to the plurality of performance operators;

a musical tone signal generator for generating musical tone signals based on the performance data stored in the storage medium so as to play automatic performance or for generating musical tone signals in response to the tone-generation instructions being issued from each of the plurality of performance operators so as to play manual performance using each of the tone colors assigned to the performance operators; and

a plurality of speakers for producing musical tones corresponding to the musical tone signals of the automatic performance or manual performance, wherein the plurality of speakers are arranged on the main unit in connection with the plurality of performance operators respectively.

14. (Amended) A musical tone signal generation apparatus according to claim 2 further comprising:

an [informer] speaker that informs the user of generation of the musical tone signals generated by the musical tone signal generator.

15. (Amended) A musical tone signal generation apparatus according to claim 2 further comprising:

a storage medium for storing musical tone control data; and

an automatic performance controller for controlling the musical tone signal generator based on the musical tone control data stored in the storage to play automatic performance.

16. (Amended) A musical tone signal generation apparatus according to claim 3 further comprising:

a storage medium for storing musical tone control data; and

an automatic performance controller for controlling the musical tone signal generator based on the musical tone control data stored in the storage to play automatic performance.

17. (Amended) A musical tone signal generation apparatus according to claim 14 further comprising:

a storage medium for storing musical tone control data; and

an automatic performance controller for controlling the musical tone signal generator based on the musical tone control data stored in the storage to play automatic performance.